



## Helping connect and automate the agriculture industry

CASE STUDY

### Summary

This material handling customer came to Beacon EmbeddedWorks to help them build a robotic solution for the agriculture and growing market to reduce the need for human labor. Utilizing our embedded product expertise, the customer was able to employ robots to lower risk and increase efficiency. Our wireless technology and product-ready software ensured an easily implementable, highly connected solution.

### Challenge

In many industries today the availability of labor, changing labor laws, and the tightening of environmental regulations make it difficult to sustain normal operations. This is especially true in the agriculture market. Large growers have acres and acres of potted plants that make their way to greenhouses and nurseries to be sold each year. These plants start out as young seedlings and are packed closely together, then as they grow, the pots need to be spaced out. When winter comes, they are packed closely again. Moving thousands of potted plants several times a year is difficult, strenuous work, and many growers are having a harder time finding laborers to do the work. We worked with a material handling company to build a robot that would perform these manual tasks for growers all over the country. To help develop their robot, the customer turned to Beacon EmbeddedWorks for our full service solutions, driven by robotics and embedded products expertise.

### Customer Profile

The customer is a material handling company that is best known for their innovation robotic solutions. The company's line of robots are designed to aid workers with manual labor tasks in a variety of industries from agriculture to industrial.

### More Information

#### Why choose a Beacon EmbeddedWorks SOM?

See what differentiates our SOMs from the rest.

[beaconembedded.com/system-on-modules/](https://beaconembedded.com/system-on-modules/)

#### About Beacon EmbeddedWorks

Beacon EmbeddedWorks is a full-service provider of innovative System on Modules (SOMs). Backed by a suite of customization, security, and support services, our dependable, pre-certified, and feature-dense embedded solutions serve the most strenuous applications.



## Solution

Beacon's software and electrical engineering teams were chosen to help the customer put together the main board and motor control for the robot. To meet their goals, the customer chose the AM3517 System on Module (SOM) for its compact, product-ready software. Based on Texas Instruments' Sitara AM3517 microprocessor and designed in the SOM-M2 form factor, the AM3517 module offers essential features for embedded networking applications including Wi-Fi connectivity to create seamless communication from the controller to the robot. Our engineers provided software support and real-time resolution of issues that arose as different iterations of the product were created. Our teams supported the customer through the entire development process, from ideation to fulfillment.

## Results

Using an off-the-shelf solution, the customer was able to reduce their design risk to bring their device to market faster while incorporating unrivaled wireless connectivity and power efficiency. Using sensors to detect individual plants, the robot has the ability to pick up and move pots along a path marked by reflective tape on the ground. The marketable solution is now available to farmers to increase efficiency and decrease risk.

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